US Army Corps
of Engineers
North Central Division

Great Lakes Update

No. 105 April 5, 1994

The Port of Toledo

Located at the hub of a huge North American market, comprising 37.5 million people that reside within a 250-mile radius, the Port of Toledo plays an important role in international trade and commerce. Toledo was formed in 1833 from the merger of the two villages of Port Lawrence and Vistula, which had ports on the Maumee River at the western end of Lake Erie. Following the end of the "Toledo War" between the States of Michigan and Ohio, an act of Congress granted the Toledo area to Ohio. By the time Toledo was incorporated in 1837, a total of 756 steamboats and 203 schooners had cleared the Port of Toledo.

In the 20th century, the Port of Toledo's role dramatically expanded with the opening of the St. Lawrence Seaway in 1959. In 1992, some 155 years after its incorporation, more than 900 lake and overseas vessels cleared the Port, carrying 12.4 million tons of cargo consisting of coal, iron ore, grain, petroleum, dry and liquid bulks, and other miscellaneous goods. Figure 1 shows an aerial view of the Port's cargo handling facilities on the Maumee River.

A Variety of Cargoes

The Port of Toledo is one of the Great Lakes' most versatile cargo handling ports. In the

Figure 1. Aerial view of the Port of Toledo

mid-1960s, Toledo was the nation's single largest coal port, handling more than 35 million tons. However, with the changing environmental regulations on the burning of high sulfur coal, the port's coal business diminished over the last three decades. In 1992, Toledo shipped a total of 6.3 million tons of coal to U.S. and Canadian utilities and power plants.

Nevertheless, port officials believe Toledo's potential coal rebound rests in the development of a coal-blending facility. Such a facility would blend low sulfur coal, off-loaded from rail cars or ships from western states, with higher sulfur content Appalachian coal, which is the kind traditionally shipped through Toledo. Planning is underway on the development of such a facility.

Iron ore is the second of Toledo's primary bulk cargoes. The ore, in the form of taconite pellets, is a designated cargo bound for Armco steel mills in Ohio and Kentucky. It is shipped to Toledo from Lake Superior ports on self-unloading vessels. Figure 2 shows the Columbia Star, a 1,000 foot long bulk carrier, discharging ore pellets at the TORCO Dock. Nearly three million tons went through Toledo in 1992. According to Toledo-Lucas County Port Authority Seaport Director, John M. Loftus, "Ore movements generally mirror the nation's economy and last year [1992] Toledo ore was up 6.5 percent over 1991. We hope it continues."

The development of the Port's grain trade precedes 1837, but its grain shipping reputation grew considerably with the coming of the St. Lawrence Seaway in 1959.

The Port's peak export years were from 1975 to 1982 when grain exports averaged more than 137 million bushels per season. In 1978, it recorded its peak year, 168 million bushels, shipped primarily from its three riverfront elevators, operated by The Andersons, Cargill Inc., and Mid-States Terminals, Inc., the latter now named Countrymark Cooperative, Inc.. In addition, its exports to Canada and overseas have averaged more than 60 million bushels a year during the past decade.

While Toledo remains an important grain shipping center on the Great Lakes - St. Lawrence Seaway today, it is not likely, in the near term, that grain exports will approach those of the peak years, Mr. Loftus

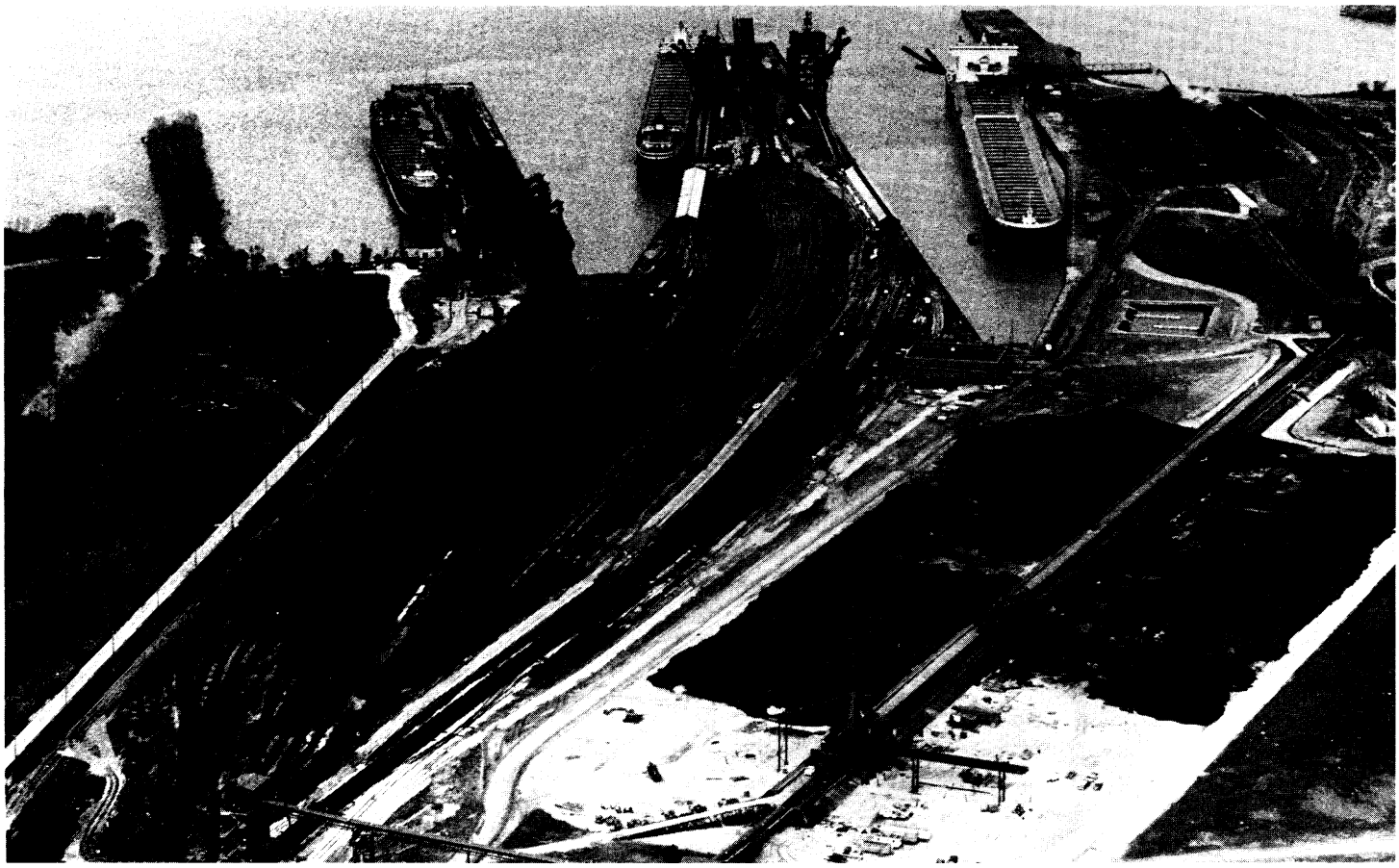

Figure 2. The Columbia Star, a 1,000 footer, unloads ore pellets.

said. Loftus continues, "Times have certainly changed. A number of key countries where Toledo once shipped grain are now net exporters of grain, and the Japanese have invested in Mississippi River facilities."

Last summer, Toledo and the Seaway were able to help midwestern farmers affected by the disastrous Mississippi River flooding that made that waterway temporarily unusable. Approximately 12 shiploads of diverted grain were routed through Toledo. According to Rob Greenlese, Port Authority Manager of Trade Development, the 12 shipments, while coming at the misfortune of others, brought a positive economic impact to the Toledo area of $1.5 million to $6.5 million per ship. "Grain shipments in the summer are generally slow so the diversions helped us. Plus, we were able to help the Mississippi River area farmers get their product to market."

As previously stated, grain has been a base cargo for Toledo. Many ships that deliver general cargoes leave Toledo with return cargoes of grain. This "perfect turnaround" capability gives the Port a key cargo advantage that many ports don't have.

General cargoes, along with a variety of dry and liquid bulk cargoes, are handled through the Port Authority's 150-acre overseas cargo center located at the mouth of the Maumee River. The facility also has heavy lift capability up to 110 tons, courtesy of the Port Authority's huge gantry cranes, "Big and Little Lucas." Figure 3 shows Big Lucas in action. A bulk liquid storage facility was constructed at the center to accommodate a new Toledo cargo of liquid bituminous. The product, delivered by barge and tank ship, is used by area highway contractors in making asphalt. Operating the facility has helped create an additional 25 new jobs at the Port's center with annual cargo trade approaching 100,000 tons.

In 1987, the Medusa Corporation opened a dockside cement distribution facility on a 3.7 acre site, with construction financed by $3.2 million in Port Authority industrial revenue bonds. Bulk cement is delivered to the facility by Medusa's vessels.

Figure 3. "Big Lucas", a 110-ton gantry crane, loads rolls of steel into a vessel.

A Strategy for the Future

As in the 1800s, Toledo's ability to handle many different types of cargo at numerous port facilities along its nearly seven miles of harbor, has been a key factor in the Port's longevity and productivity. Mr. Loftus attributes a large share of the Port's continuing success to "cargo diversification," a strategy Toledo has been following since the late 1970s.

The strategy is quite simple; aggressively solicit new and different cargoes and be willing to build facilities to handle these cargoes. This strategy has been, and continues to be successful, plus it helps the Port respond to the dynamics of the national and international marketplace. It has contributed to the Port of Toledo being the largest international tonnage port on the Great Lakes today, according to Mr. Loftus. The Port of Toledo is one of the few ports in the nation that is financially self-sustaining.

The Toledo Shipyard

As part of its cargo diversification strategy, the Port Authority purchased the abandoned American Ship-building Company's Toledo Yard in 1985, and renamed it the Toledo Shipyard. The Yard is operated by the Toledo Ship Repair Company, part of the Manitowoc Marine Group of the Bay Shipbuilding Company of Sturgeon Bay, Wisconsin.

The Yard's future brightened considerably when the Port Authority extended the main drydock from 650 feet to 800 feet in 1991. Figure 4 shows the shipyard in the center, with a ship in dry dock, as well as the Medusa Corporation's cement silos, to the left. New ship repair opportunities resulted from the drydock extension and employment has swelled to more than 150 people during the peak winter ship repair seasons. "With the longer drydock, our ship repair market potential jumped from only 45 ships that were operating on the Great Lakes before the extension, to over 120 ships afterward," said Seaport Director Loftus. "This has meant more work for Toledo workers and that's what it's all about," he added.

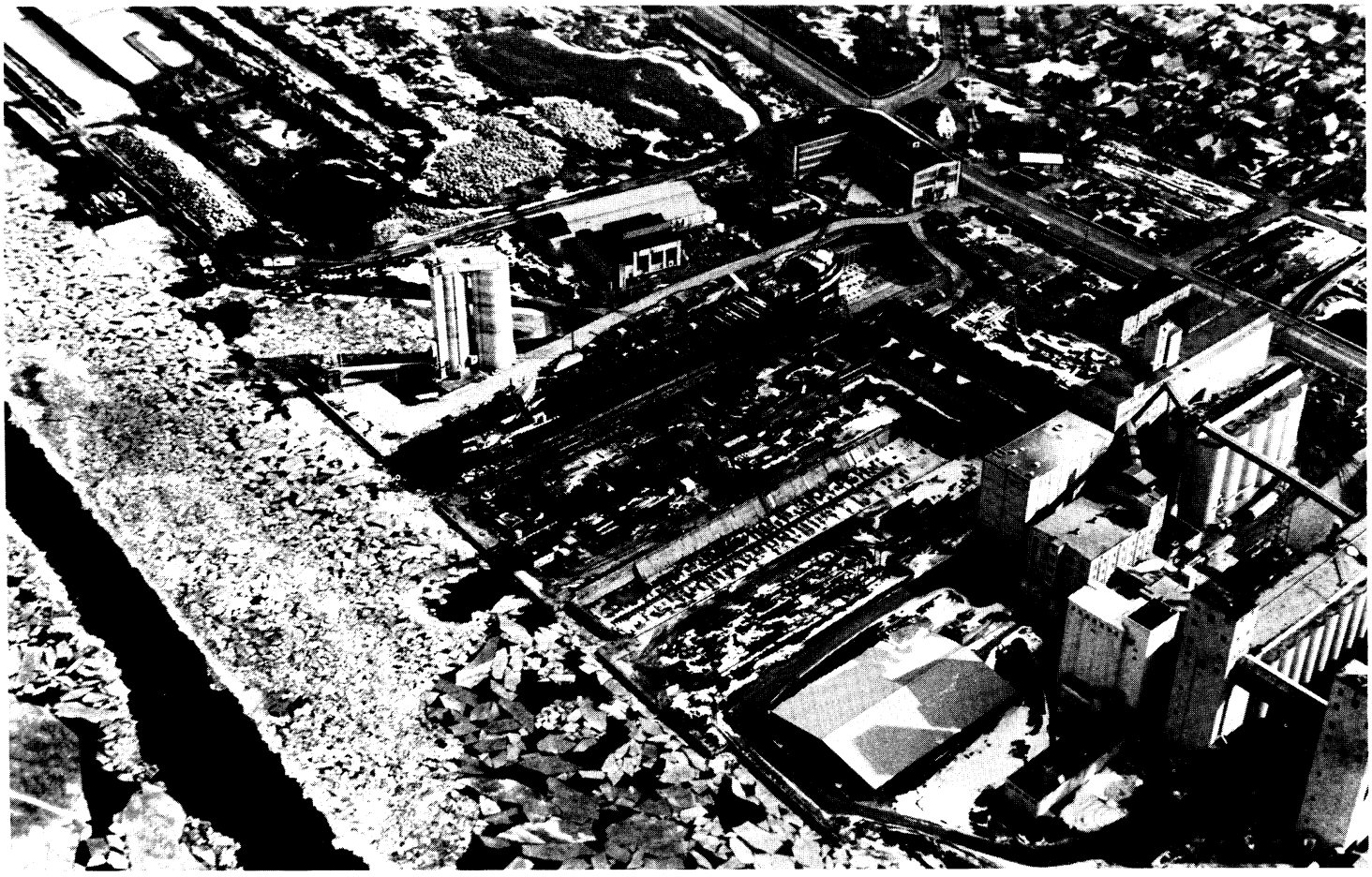

Figure 4. The Port of Toledo is home to the Toledo Shipyard and Medusa Corporation cement silos.

Foreign Trade Zone

The overseas cargo center, opened in 1959, is also the site of Foreign Trade Zone No. 8, the first operating zone on the Great Lakes. The zone has proven to be a positive marketing asset for the port. Many internationally-minded companies have taken advantage of the numerous trade and cost-saving opportunities permitted by zone regulations. In the zone, goods can be stored duty free until they are moved into U.S. Customs territory.

Steel, plus a variety of non-ferrous metals, particularly zinc, have long been mainstays of the Port's general cargo business. In 1991, Toledo's foreign trade zone was selected as a cargo delivery point for the prestigious London Metal Exchange. As a result, the zone has seen a substantial increase in the handling of aluminum, tin, lead, zinc and nickel that are traded on the London Metal Exchange. The metals are delivered to and from the zone by ship, rail, and truck.

In addition, Toledo established a European marketing office in London, England last year. Port officials are using the office to assist port marketing and sales efforts throughout Europe.

Toledo-Lucas County Port Authority

The mission of the Toledo-Lucas County Port Authority is to foster the economic well being of Toledo and northwest Ohio by developing, operating, and promoting safe, efficient seaport and airport facilities, and by providing other services that will stimulate public and private sector investments to maintain or expand the region's economic employment base. The Port Authority has three divisions, Seaport, Airport and Economic Development, but it has been the Seaport Division that has provided most of the capital needed by the other two divisions in the past five years.

In 1973, the Port Authority assumed the operational management of Toledo's two airports, Toledo Express, northwest Ohio's main passenger airport, and Toledo Metcalf Field, a smaller general aviation field. The Port Authority was instrumental in attracting Burlington Air Express to establish its international air cargo hub at Toledo Express Airport in 1991. More than 1,200 jobs have been developed as a result of the new cargo hub, as well as producing an annual economic impact in the area totaling more than $125 million.

In 1988, the Port Authority became the lead agency for economic development activities in the Toledo-Lucas County area. Since that time, the Port Authority, in concert with its economic development partners, has helped create and retain more than 13,000 jobs at 120 companies through its activities. Just over 6,000 of these jobs came through direct Port Authority financing programs with total financing for companies amounting to more than $294 million.

The Port Authority is proud of its record of accomplishment in each of its divisions. Today, annual sales related directly and indirectly to the Port of Toledo totaled more than $500 million. In the five-county area around the Port, over 5,000 individuals receive annual wages of almost $110 million in positions relying in some way upon the port. Port Authority President Gary Failor states that, "We're proud of what we've accomplished at the Port of Toledo and in our other areas of effort, but we're not satisfied. We know we can and will do more. That's our mission."

Acknowledgment

Many thanks to the Toledo-Lucas County Port Authority for much of the written materials and photographs provided for the preparation of this article.

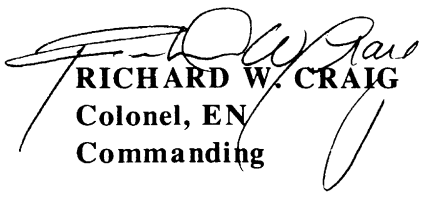

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Table 1

Possible Storm Induced Rises (in feet) at Key Locations on the Great Lakes
April 1994

	Degrees of Possibility				
	20%	10%	3%	2%	1%
LAKE SUPERIOR					
Duluth	0.8	0.9	1.1	1.2	1.3
Grand Marais	0.6	0.7	0.9	1.1	1.2
Marquette	0.8	0.9	1.1	1.3	1.4
Ontonagon	0.8	1.3	2.1	2.8	3.6
Point Iroquois	0.9	1.0	1.2	1.4	1.6
Two Harbors	0.6	0.7	0.9	0.9	1.0
LAKE MICHIGAN					
Calumet Harbor	1.5	1.7	2.0	2.1	2.3
Green Bay	2.1	2.5	3.1	3.5	3.9
Holland	0.9	1.0	1.2	1.3	1.4
Kewaunee	0.8	0.9	1.0	1.1	1.2
Ludington	0.9	1.0	1.1	1.2	1.3
Milwaukee	1.0	1.1	1.2	1.3	1.4
Port Inland	1.1	1.3	1.5	1.7	1.8
Sturgeon Bay	0.9	1.0	1.1	1.2	1.3
LAKE HURON					
Detour Village	0.5	0.6	0.7	0.8	0.8
Essexville	1.9	2.3	2.8	3.1	3.5
Harbor Beach	0.7	0.8	1.0	1.1	1.2
Harrisville	0.5	0.6	0.6	0.7	0.7
Lakeport	1.1	1.3	1.6	1.8	2.0
Mackinaw City	0.7	0.8	0.9	1.0	1.1
LAKE ST. CLAIR					
St. Clair Shores	0.6	0.7	1.0	1.1	1.3
LAKE ERIE *					
Barcelona	1.7	2.2	2.7	3.1	3.5
Buffalo	3.5	4.3	5.5	6.3	7.1
Cleveland	1.1	1.3	1.6	1.8	1.9
Erie	1.7	2.2	2.9	3.4	4.0
Fairport	0.9	1.1	1.4	1.6	1.9
Fermi Power Plant	2.0	2.5	3.0	3.5	3.9
Marblehead	1.5	1.8	2.2	2.4	2.7
Sturgeon Point	2.8	3.7	4.9	5.8	6.8
Toledo	2.7	3.3	4.0	4.5	5.1
LAKE ONTARIO					
Cape Vincent	0.8	0.9	1.1	1.2	1.4
Olcott	0.5	0.6	0.7	0.7	0.8
Oswego	0.7	0.8	0.9	1.0	1.1
Rochester	0.7	0.8	0.9	1.0	1.1

* The water surface of Lake Erie has the potential to tilt in strong winds, producing large differentials between the ends of the lake.

Note: The rises shown above, should they occur, would be in addition to the still water levels indicated on the Monthly Bulletin. Values of wave runup are not provided in this table.

Great Lakes Basin Hydrology

During the month of March precipitation on each Great Lakes basin was below average, with the exception of Lake Ontario, which was slightly above average. For the year to date, precipitation is about 18% below average for the entire Great Lakes basin. The net supply of water to Lake Superior was above average in March, Lakes Michigan-Huron and Ontario were below average and Lake Erie was average. Table 2 lists March precipitation and water supply information for all of the Great Lakes.

In comparison to their long-term (1918-1993) averages, the March monthly mean water level of Lake Superior was 1 inch above average, Lakes Michigan-Huron, St. Clair and Erie were 10, 11 and 9 inches above average respectively, and Lake Ontario was 5 inches below its long-term average. Shoreline residents on Lakes Michigan-Huron, St. Clair and Erie are cautioned to continue to be alert to possible adverse weather conditions, as these could compound an already high lake level situation. Further information and advice will be provided by the Corps of Engineers should conditions worsen.

TABLE 2
GREAT LAKES HYDROLOGY[1]

PRECIPITATION (INCHES)

BASIN	MARCH				YEAR-TO-DATE			
	1994[2]	Average (1900-1991)	Diff.	% of Average	1994[2]	Average (1900-1991)	Diff.	% of Average
Superior	1.2	1.8	-0.6	67	3.7	5.2	-1.5	71
Michigan-Huron	1.2	2.2	-1.0	55	4.9	6.0	-1.1	82
Erie	2.0	2.8	-0.8	71	6.2	7.3	-1.1	85
Ontario	2.9	2.7	0.2	107	7.2	7.7	-0.5	94
Great Lakes	1.5	2.2	-0.7	68	5.0	6.1	-1.1	82

LAKE	MARCH WATER SUPPLIES[3] (CFS)		MARCH OUTFLOW[4] (CFS)	
	1994[2]	Average (1900-1989)	1994[2]	Average (1900-1989)
Superior	57,000	45,000	73,000	66,000
Michigan-Huron	168,000	184,000	191,000[5]	170,000
Erie	72,000	72,000	213,000[5]	193,000
Ontario	67,000	75,000	250,000	233,000

[1]Values (excluding averages) are based on preliminary computations.
[2]Estimated.
[3]Negative water supply denotes evaporation from lake exceeded runoff from local basin.
[4]Does not include diversions.
[5]Reflects effects of ice/weed retardation in the connecting channels.

CFS = cubic feet per second.

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